



To Tam T.
file
ACT/045/017

Getty Oil Company

P.O. Box 7900, Salt Lake City, Utah 84107 • Telephone (801) 263-3850

December 16, 1982

Mr. James Smith
Coordinator of Mined Land Development
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

JIM

DEC 21 1982

RE: Mercur Mine Modification
ACT/045/017
Tooele County, Utah

Dear Mr. Smith:

In response to your October 7, 1982 letter, we are supplying the following information for your review:

- 1 a. The attached field maps, FSK FC-33 and FSK FC-35, show the extent of current disturbances. The other attached maps, FSK FC-37 and Final Drainage Plan, show the ultimate extent of future disturbances.
- 1 b. The proposed future topsoil stockpiles related to expansion of the tailings facility are shown on map FSK FC-37. Unless the Division staff objects to these topsoil stockpile locations at this time, we will use these sites.
2. If any significant stability problems occur in any topsoil stockpile, we will notify the Division as to the description and remedies of the problem.
3. The present and future topsoil stockpile locations are shown on the attached maps.
- 4 a. During the period of operations and at least six-months prior to the cessation of mining activities, we will consult with the Division regarding possible mycorrhizal inoculation of soil materials intended for reclamation use.
- 4 b. Where practical, we will attempt to maximize the lateral topsoil stockpile dimensions. Due to the topographic constraints, this may not prove to be possible at some stockpile locations.

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DIVISION OF
OIL, GAS & MINING

5. The attached map and final drainage plan, shows the layout of the drainage diversion and collection system for the final pit and dump configuration. The heavy lines on the map represent the alignment of ditches. Where the ditches cross haul roads, the water will be conveyed across the roads in rock-paved swales or depressions. This practice will eliminate the need for culvert runs of up to 100-feet and thereby assure that the channels will not be plugged. All ditches and sediment ponds are designed to safely handle the 10 year 24 hour flow.

Sediment ponds A and B are presently functional. Sediment pond C has not yet been built. As previously discussed with the Division staff, this drainage presently enters an abandoned mine shaft. We have made application to the Department of Health for an underground injection approval, to continue to use this shaft as an injection well. If they approve this concept, Sediment pond C will be dropped from our drainage plan. Sediment pond D has not been built yet and the small amount of disturbance in its control area is presently being handled by temporary sediment control facilities.

6. A yearly updated map at a scale of 1" = 200" will be attached to our Annual Operations and Progress Reports. It will show the disturbed areas, soil stockpiles, hydrologic facilities, and roads.
7. The mineralized overburden which comprise part of the waste dumps has been sampled for E. P. Toxicity analyses. The acid leachate Strontium 90 radioactivity was less than 0.02 pCi/l for all samples.
8. The attached topsoil inventory shows the expected volumes of available topsoil for each area of disturbance. These volumes are based on past soil studies and construction experience at Mercur. The available topsoil from the tailings facility is dedicated to reclamation of same. The available topsoil from the other facilities will be shared among those locations to topsoil the greatest possible area. The resulting topsoil redistribution plan includes a net soil deficit, which will leave approximately 93 acres of dump slopes untiltopsoiled. This acreage will be chosen at the time of reclamation, utilizing criteria that consider: aspect, aesthetics, slope angle, waste rock composition, hydrologic impacts, and possibly others. Attempts will be made to revegetate all disturbed areas, irregardless of the presence of topsoil. The revegetation of bare wasterock slopes will be examined by revegetation test plots during mine operations.

9. The attached reclamation cost estimate includes all of the Division's comments from our meeting with you on December 2, 1982. The one exception to this is the amount for item #1, Clean-up and Salvage, which although modified to incorporate higher unit costs for the CAT 983 B loaders still reflects our position that substantial salvage values are expected to reduce demolition costs.

Based upon the outcome of future discussions on this item, the final reclamation cost estimate may be changed. We assume that this would be the only area of change in reclamation costs at this point in time.

We are submitting this information within the 90-day response period stipulated by the Division. If you have any questions, please call Brian Buck at this office.

Sincerely,

GETTY MINING COMPANY



Robert L. Hautala
District Production Manager

RLH/BWB/nb

Attachments:

Maps

Final Drainage Plan
FSK FC-33
FSK FC-35
FSK FC-37
Reclamation Cost Estimate
Topsoil Inventory

MERCUR MINE TOPSOIL INVENTORY
12-14-82
B. W. Buck

AREA	OPEN PIT	DUMPS	MILL SITE	TAILINGS POND	SOIL PILES	ROADS	SED. PONDS
Acreage	87	245	32	141.1	18	35	6
Available Topsoil (Ac)	58	41.6	16.8	127.3	6	0	2.4
Depth of Topsoil Removal (in)	10	10	10	37.3+	10	0	10
Salvaged Topsoil Volume (Est.)	48.3 Ac ft 77,924 yd ³	34.7 ac ft 55,982 yd ³	14 ac ft 22,587 yd ³	367.4 ac ft 638,880 yd ³	5 ac ft 8,067 yd ³	0 0	2 ac ft 3,227 yd ³
Depth of Topsoil Replacement (in)	0	6	6	24	6	0	6
Volume Required for reclamation	0	122.5 ac ft 197,633 yd ³	16 ac ft 25,813 yd ³	367.4 ac ft 638,880 yd ³	9 ac ft 14,520 yd ³	0	6 4,840 yd ³
Surplus (+) or Deficit (-)	+48.3 ac ft 77,924 yd ³	-87.8 ac ft 141,651 yd ³	-2 ac ft 3,227 yd ³	0	-4 ac ft 6,453 yd ³	0	-1 ac ft 1,613 yd ³
Volume allotted for Reclamation	0	76 Ac. Ft. 122,613 yd ³	16 Ac. Ft. 25,813 yd ³	367.4 ac ft 638,880 yd ³	9 ac ft 14,520 yd ³	0	3 ac ft 4,840 yd ³
Acres of Topsoil Replacement (Est.)	0	152	32	141.4	18	0	6

ITEM #	ACTIVITY	AREAS EXCLUDED	AREAS INCLUDED	UNITS ACRES	HOURS WORK/ACRE	TOTAL HOURS/AREA	REQUIRED EQUIPMENT	\$/HOUR (includ. operator)	TOTAL COST/AREA	GENERAL/NOTES
5	Topsoil Replacement Level Area	-Open Pit -Public Roads -Plant Access Road	Plant Site -Dump Tops -Tailings Pond -Ripped Roads	341.3 ac ft	N/A	N/A	30 yd ³ D8K-Dozer	\$1.90/yd ³	1,046,198	Scrapers will haul and spread soil to: Plant Site = 32 Acres Dump Tops = 95 acres Ripped Roads = 15 acres Settling Ponds=6 acres
		-Tailings Pond Access -Dump Slopes -Tailings Dams -Topsoil Piles	-Settling Ponds -Tailings Dam Borrow Area							<u>Total 148 acres</u> <u>148 X 0.5' = 74 Ac. Ft</u> <u>Tailings Pond = 81 acs.</u> <u>Tailings Dam Borrow area = 21.8</u> <u>102.8 X 2.6' = 267.3 Ac. Ft.</u>
5	Topsoil Replacement Steep Area	-Open Pit -Public Roads -Plant Access Road -Tailings Pond Access -Dump Tops -Tailings Ponds -Ripped Roads -Settling Ponds -Topsoil Piles	-Dump Slopes -Tailings Dams -Tailings Dam Additional Clearing -Tailings Dam Excess Stockpile	128.6 Ac	Ft N/A	N/A	10 yd ³ Loader 50 T Trucks D8K Dozer	\$2.40/yd ³	3497,939	Separate load, haul, spread operations to cover: Dump Slopes = 57 acres <u>57 X 0.5' = 28.5 Ac. Ft.</u> <u>Tailings Dams = 25 acres</u> <u>Additional Clearing = 6.3 acres</u> <u>Excess Stockpile = 7.2 Acres</u> <u>38.5 acres x 2.6' = 100.1 Ac. Ft.</u>
5	Subtotal								1,544,137	

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6	Cover Crop Seeding	All other areas	-Dump Tops -Tailings Pond	176 Ac. 176 Ac.	0.25	44	Seed Drill and Tractor Seed Material	70.00/hr. 7.50/Ac.	3,080 1,320	Dump Tops = 95 acres Tailings Pond = 81 acres
6	Subtotal								4,400	
7	Perennial Seeding	-Open Pit -Public Roads -Plant and Tailings Access Roads	-Plant Site -Tailings Facility -Dumps -Soil Piles -Sediment Ponds	407 Ac. 407 Ac.	0.17	69.2	Hydroseeder Seed Material	95.00/hr. 166.00/Ac.	6,573 67,562	Plant Site = 32 acres Tailings = 106 acres Dump = 245 acres Soil Piles = 18 acres Sed. Ponds = 6 acres
7	Subtotal								74,135	
8	Fertilizing	As in #7	As in #7	407 Ac.			Fertilizer Mtr. 240 #/Ac. at 0.25/#	60.00/Ac.	24,420	Fertilizer is applied by hydroseeder with seed.
8	Subtotal								24,420	

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9	Planting Trees & shrubs	-Open Pit -Tailings Pond -Public Roads -Plant Access Road -Tailings Pond Access	-Plant Site -Soil Stockpiles -Tailings Dams -Dumps -Ripped Roads -Settling Ponds	341 Ac.			Materials Installation	0.65/plant 1.35/plant	49,871 103,579	Plant 225 stems/acre Plant Site = 32 acres Soil piles = 18 acres Tailings Dams = 25 acres Dumps = 245 acres Ripped Roads = 15 acres Settling Ponds = 6 acres Total = 341 acres
9	Subtotal								153,450	
10	Reseeding	As in #7	As in #7	(see notes) 204 Ac.	0.17	34.7	Hydroseeder	95.00/hr	3,295	based on perennial seeding of 50%
				204 Ac.			Seed Material	166.00/Ac.	33,864	of original seeding area
				204 Ac.			Fertilizer	2.40/Ac.	490	
10	Subtotal								37,649	
11	Monitoring	None	A11	A11			None	1000/yr.	3,000	annual inspections for 3 years following reclamation
11	Subtotal								3,000	

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3	Road Ripping	-Public Roads -Tailings Pond Access -Plant Site Access	-All Dump Roads	15 Ac.	1	15	D-8K Dozer	\$120.00 Hr	1,800	w/9' ripper at 2.2 mph, double coverage.
2	Subtotal								1,800	
4	Scarifying before Topsoiling + Scarifying Topsoil before Seeding	-Open pit -Public Roads -Plant Access Road -Tailings Pond access -Dump Slopes	-Plant Site -Dump Tops -Tailings Pond	208 Ac. 208 Ac.	0.33 0.33	69 69	16-G Grader 16-G Grader	\$192.00 Hr \$192.00 Hr	13,248 13,248	16G w/10' ripper at 2.4 mph. Plant Site = 32 acres Dump Tops = 95 acres Tailings Pond = 81 acres Total = 208 acres
4	Subtotal								26,496	

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MERCUR MINE RECLAMATION COST ESTIMATE
12-14-82
by: B. W. Buck

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ITEM #	ACTIVITY	AREAS EXCLUDED	AREAS INCLUDED	UNITS ACRES	HOURS WORK/ ACRE	TOTAL HOURS/ AREA	REQUIRED EQUIPMENT	\$/HOUR (includ. operator)	TOTAL COST/ AREA	GENERAL/NOTES
1	Clean-up and salvage	~Foundations	structures(a) equipment	N/A			Loaders (2) Trucks (2) Crane (1)		33,640	All mining and process equipment and facilities have salvage value to balance demolition costs. Non-process buildings have less salvage value.
1	Subtotal								33,640	
2	Grading & Shaping	~Open Pit ~Tailings Pond ~Public Roads	A. Dumps(b) B. Soils Piles C. Waterbars D. Mill Site E. Culvert Removal (c)	60 ac. 18 ac. 50 32 ac. 3 culverts 12 culverts	13 6 0.5 12 3.7 2.25	784 108 25 384 11.1 27	D8K Dozer D8K Dozer D8K Dozer Cat 225 Bckhoe Cat 225 Bckhoe	\$120 Hr. \$120 Hr. \$120 Hr. \$120 Hr. \$128 Hr. \$128 Hr.	94,080 12,960 3,000 46,080 1,421 3,456	Aft. topsoil removal Covering foundations Haul Road Culverts Access Road Culverts
2	Subtotal								160,997	

- (a) See attached demolition activity cost
- (b) See attached dump regrading profile
- (c) See attached culvert removal profile

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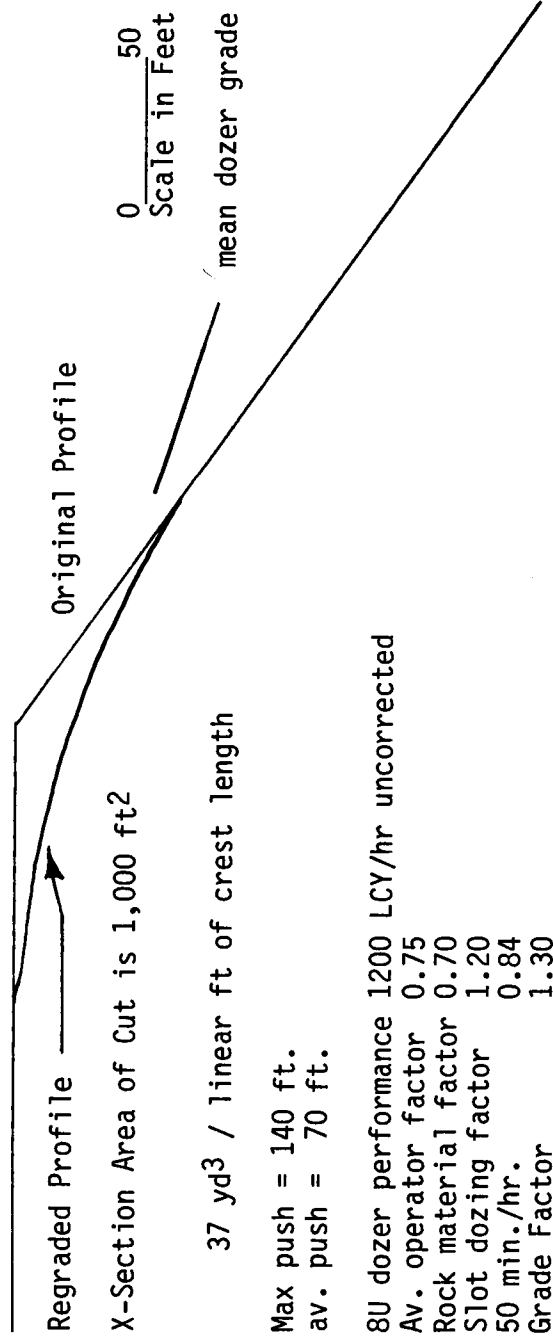
DEMOLITION ACTIVITY COST

-Assume all mining equipment and process facilities have salvage value equal to their cost of removal.

-Non-process buildings are loaded into trucks for disposal in on-site landfill as follows:

<u>EQUIPMENT</u>	<u>HOURS</u>	<u>COST</u>	<u>TOTAL COST</u>
(2) Cat 983B Loaders	40	\$ 200/hr	16,000
(2) End Dump 20T Trucks	40	\$ 46/hr	3,680
(1) 15T Crane	40	\$ 55/hr	2,200
12 Laborers	40	\$ 12/hr	5,760
Foreman	40	\$ 15/hr	600
(6) Cutting Torches	40	\$ 10/hr	2,400
Mobilization		\$3,000	3,000
		<u>TOTAL COST</u>	<u>33,640</u>

Dump Regrading / Mercur



Max push = 140 ft.
av. push = 70 ft.

8U dozer performance 1200 LCY/hr uncorrected
Av. operator factor 0.75
Rock material factor 0.70
Slot dozing factor 1.20
50 min./hr. 0.84
Grade Factor 1.30

Corrected dozer performance 825 LCY/hr

Linear feet of dump crest = 17,500

17,500 ft X 37 yd³/ft = 647,500 yd³

647,500 yd³ ÷ 825 LCY/hr X \$120.00/hr = \$94,200.00

17,500 ft X 150 ft ÷ 43,560 ft²/acre = 60.26 acres

Cost / Acre

\$94,200 ÷ 60.26 acres = \$1,563/acre

Excavation Volumes Estimate

Haul Roads (50 Ft. surface width)

$$108 \text{ Ft}^2 \times 70 \text{ ft} - 27 \text{ ft}^3/\text{yd}^3 = 280 \text{ yd}^3$$

Access Roads (30 ft. surface width)

$$54 \text{ ft}^2 \times 50 \text{ ft.} - 27 \text{ ft}^3/\text{yd}^3 = 100 \text{ yd}^3$$

$$\text{Cat } 225 \text{ } 1 \text{ yd}^3 \text{ performance} = 130 \text{ LCY/hr.}$$

$$280 \text{ yd}^3 - 130 = 2.15 \text{ hrs.}$$

$$100 \text{ yd}^3 - 130 = 0.75 \text{ hrs.}$$

add 1/2 hr. for culvert loading

1 hr. for machine tram

CULVERT REMOVAL

